

ABSTRACT OF THE DISCLOSURE

A system and method for managing access to a satellite-based transponder by a plurality of aircraft each having a mobile radio frequency (RF) system. The system employs a ground-based, central control system for managing access to the satellite-based transponder so that the aggregate power spectral density (PSD) of the RF signals of all the mobile systems does not exceed, at any time, limits established by regulatory agencies to prevent interference between satellite systems. This is accomplished by employing signal spreading to reduce the PSD of the transmit signal from each mobile system and by strictly regulating the quantity and transmit power of the mobile systems sharing a satellite transponder. Each mobile system sends a request for authorization to transmit to the satellite transponder which is relayed to the central control station. This request includes all the necessary information for allowing the central control system to determine the PSD of the signal to be transmitted by the requesting mobile system. If this PSD would cause the aggregate PSD to exceed the regulatory PSD limit then the request is denied; if not, the request is approved. The central control system continuously monitors the PSD from each mobile system while they move within the coverage area for the satellite transponder.